REMARKS

Applicant wishes to thank the Examiner for his review of the present application. Claims 1-4, 8-10, 12-31, and 48-55 are pending in the application.

35 U.S.C. §103(a)

The office action rejected claims 1-4, 8-10, 12-31, and 48-55 under 35 U.S.C. §103(a) as being unpatentable over Lee et al. (U.S. patent no. 6,430,427), hereinafter referred to as "Lee," in view of DiFilippo et al (U.S. patent no. 6,829,378), hereinafter referred to as "DiFilippo."

Claim 1 defines, in relevant part, a method to derive quantitative information from an x-ray image in a network environment. Among other things, the method includes providing a digitized x-ray image on a local computer, transmitting the image to a remote computer, and analyzing the image at the remote computer to derive quantitative information on trabecular bone structure. The quantitative information may include trabecular thickness, two-dimensional spaces between trabeculae, and/or three-dimensional spaces between trabeculae.

Lee fails to teach or suggest such a method. Rather, Lee teaches a method of estimating a bone mineral density using a trabecular index. In particular, Lee divides a region of interest of an x-ray into a plurality of square blocks having sides lengths between 1.0 and 1.5. Lee then scales the gray levels in each block, averages the scaled gray level within each block, and re-averages the gray levels for all of the blocks to determine a trabecular index (col. 4, lines 5-20). Lee then uses the trabecular index to estimate the bone mineral density. Nowhere does Lee teach or suggest deriving quantitative information on the trabecular thickness and two-dimensional or three-dimensional spaces between trabeculae.

The Office Action suggests that Lee teaches deriving quantitative information on the two-dimensional and three-dimensional spacing at column 4, lines 7-10. Applicants respectfully disagree. The cited passage merely states that the length of the side of the blocks is comparable to the average inter-trabecular distance between the main trabecular

lines. Nowhere does this passage, or any other passage within Lee, teach or suggest deriving quantitative information on the trabecular spacing.

Additionally, deriving quantitative information on the trabecular spacing is not necessarily inherent in Lee. As required under MPEP 2112 IV, the Examiner must provide rationale or evidence tending to show inherency. In particular, the examiner "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference…" (In re Robertson, 169 F.3d 743, 745) (emphasis added). The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). In this case, as described above, the passage relied upon in the Office Action merely states that the length of the side of the block is comparable to the average inter-trabecular distance between the main trabecular lines. This average inter-trabecular distance is not necessarily quantitatively derived from the x-ray image – Lee can estimate the average in a variety of ways. For example, Lee can determine/estimate the average inter-trabecular distance by comparing patient characteristics (e.g., the persons age, sex, known medical history, etc) to experimental data from a cross-section of the general population. In other words, Lee does not necessarily derive quantitative information on the trabecular spacing from the x-ray image, as required by claim 1.

The Office Action also suggests that Lee teaches deriving quantitative information on trabecular thickness at column 4, line 29. Applicants once again respectfully disagree. This passage is merely describing a physiological event, namely, as the bone becomes demineralized or decalcified, the bone mineral density decreases. Therefore, the bone becomes more transparent to the x-ray and the resulting width/thickness projected onto the x-ray decreases. Nowhere does Lee teach or suggest that the thicknesses are quantitatively derived. Rather, as mentioned above, Lee merely calculates a trabecular index based on the scaled and averaged gray values and uses the index to estimate bone mineral density – trabecular thickness does not play a role in Lee's process. In other words, Lee does not nor need to derive quantitative information on the trabecular thickness.

Additionally, DiFilippo fails to satisfy the deficiencies of Lee. In particular, DiFilippo is directed to a remote medical image analysis, and fails to teach or suggest deriving quantitative information (e.g., trabecular thickness, or two-dimensional or three-dimensional spaces between trabeculae) from an x-ray image, as required by claim 1.

Therefore, since neither Lee nor DiFilippo teach or suggest, alone or in combination, all limitations of claim 1, the combination cannot make the claim obvious. Additionally, claims 2-4, 8-10, 12-31, and 48-55 which depend from claim 1, are allowable for at least the same reasons discussed above with respect to claim 1.

It is believed that the application is now in order for allowance and Applicants respectfully request that a notice of allowance be issued. Applicants believe that a three month extension of time is required and hereby request that the associated fee be charged to Deposit Account No. 19-4972. Applicants also request that any other fee required for timely consideration of this application be charged to Deposit Account No. 19-4972. Applicants also request that the examiner contact applicant's attorney, Jonathan Lovely, if it will assist in processing this application through issuance.

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Respectfully submitted,

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